

Abstract

Methods and apparatus are described for reducing damage to items shipped in corrugated boxes, and for reducing damage to the boxes themselves and the packing material within them. Damage is limited by adding one or more planar damped panels to a box for redistributing kinetic energy absorbed by the box when it is subjected to characteristic shipping shock and vibration. Efficient coupling of redistributed kinetic energy to resilient packing material within a box allows the use of relatively less resilient padding surrounding shipped items, thus allowing use of a relatively smaller box to obtain an acceptable level of protection. Planar damped panels also limit shifting of the item(s) to be protected by acting as damped variable-rate springs.